REMARKS

After the foregoing amendment, claims 1-23, as amended, are pending in the application. Claims 4, 20 and 22 have been amended to more particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Claims 1-3 have been canceled. Applicants submit that no new matter has been added to the application by the Amendment.

Rejection - 35 U.S.C. § 102

The Examiner rejected claims 1-23 under 35 U.S.C. § 102 as being unpatentable over U.S. Patent No. 6,009,056 (Araki et al.).

Claims 4-7

In respect to amended claim 4, the Examiner states that Araki et al. at col. 4, lines 47-49 and 56-64 discloses a variable clock section for outputting a plurality of clock signals of different frequencies wherein the variable clock section changes a frequency of the clock signal according to a recording speed and/or reproduction. Applicants respectfully traverse the rejection.

Araki et al. is directed to an optical disk driver for constant speed recording and reproduction. In relevant part, the disk driver comprises a spindle motor 203 to rotate a disk 201 at a constant linear speed; an actuator 202; a central processor unit (CPU) 206, a rotary speed sensor 207 to sense the rotary speed of the spindle motor 203 and a voltage controlled oscillator 208.

As well known in the art and described in Araki et al. at col. 1, lines 17-53, in order to obtain constant speed recording (reproduction) at every radius on the disk, the rotary speed of the spindle is changed in accordance with the radius of the track being recorded (reproduced). Conventionally, a phase locked loop is used to control the rotary speed of the spindle. However, when the actuator makes a long jump in position from one track to another, the change in the frequency output from the sensor detecting the rotary speed of the spindle is large, resulting in a large lock up time for the phase locked loop, slowing down the time for beginning the recording (reproduction).

Araki et al. overcomes the lag in phase locked loop lock up time by using a signal indicative of the position of the actuator 202 to pre-position the VCO in the phase locked loop to an approximate frequency output of the rotary speed sensor 207 during each repositioning of the actuator. In particular, as described at col. 4, line 56 to col. 5, line 2, a control voltage C1 is produced by the CPU based on the actuator position and rotary speed of the spindle and applied to the VCO to produce a reference oscillation C2.

Amended claim 4 recites, *inter alia*, an optical disc device for emitting a light beam to an optical disc having a track for recording data, the optical disc device changing recording and reproducing speeds by changing a disc motor rotation, the optical disc device, comprising: .... a variable clock output section for outputting a plurality of clock signals of different frequencies, wherein the variable clock output section changes a frequency of the clock signal according to a recording speed and/or a reproduction speed when the converting section performs recording and/or reproduction, ...

Araki et al. discloses a disk driver in which a VCO changes frequency based on the position of the actuator and the rotary speed of the spindle. In contrast, amended claim 4 recites a variable clock section which changes frequency according to the recording and/or reproduction speed. The claimed recording (reproduction) speed is the speed of a point on the track being recorded (reproduced), commonly called the linear speed, and is not the rotary speed of the spindle. The linear speed of a track on a disk is proportional to the radius of the track and thus is not the rotary speed of the spindle.

Further, and equally important, Araki et al. discloses at col. 4, lines 45-46, that his invention is for a fixed linear speed, whereas amended claim 4 recites a recording (reproduction) device which changes recording and reproduction speeds.

Applicants submit that because Araki et al. discloses changing the VCO frequency based on the rotary speed of the spindle and not the recording (reproduction) speed of a track, and because Araki et al. operates at a fixed linear (recording/reproduction) speed, Araki et al. does not anticipate amended claim 4. Accordingly, Applicants respectfully request reconsideration and withdrawal of the §102 rejection of claim 4.

Further, it is respectfully submitted that since claim 4 has been shown to be allowable, claims 5-7 dependent on claim 4 are allowable, at least by their dependency.

Accordingly, for all the above reasons, Applicants respectfully request reconsideration and withdrawal of the § 102 rejection of claims 5-7.

Claims 8-19

In respect to independent claims 8 and 14, the Examiner states that Araki et al. discloses at col. 7, lines 12-13 an interrupt generating section for generating an interrupt signal, and at col. 2, lines 52-61 and col. 7, lines 9-13 a control section which stops operating and goes to sleep at least for a time period between reception of the interrupt signals. Applicants respectfully traverse the rejection.

By reference to col. 7, lines 12-13, the Examiner appears to be equating the signal processing clock C5 or the divided down sampling clock to the claimed interrupt signal and infers that the interval between clock transitions constitutes the time period between a first interrupt signal and a second interrupt signal.

Applicants submit that the signal processing clock or the output of the frequency divider are not interrupt signals as commonly understood.

According to The American Heritage® Dictionary of the English Language: Fourth Edition. 2000, the ordinary meaning of the word "interrupt is:

> ***1.*** *To break the continuity or uniformity of: .* ***2.*** *To hinder or stop the action or discourse of (someone) by breaking in on: To break in on an action or discourse. Computer Science* ***1.*** *A signal to a computer that stops the execution of a running program so that another action can be performed.* ***2.*** *A circuit that conveys a signal stopping the execution of a running program.*

According to an ordinary meaning of interrupt, for a signal to be an interrupt signal, an ordinary operation of a device must be interrupted. Such is not the case. As described at col. 7, lines 12-13, the clock signal is a continuous signal which provides a sampling signal of the digital filter. The operation of the digital filter continues during the application of the clock signal and does not stop between transitions of the clock signal, as inferred by the Examiner. There is no teaching or suggestion that the clock signal interrupts the operation of the digital

filter or of any other component in the disk device. Further, there is no teaching or suggestion that the clock signal itself is interrupted in order to stop and start the digital filter.

Further, as described at pages 37 – 41 of the application and generally understood, "sleep mode" is the placement of a device into an inoperable mode, where less power is consumed by the device. In the present invention, sleep mode is entered by the issuance of a first control signal, causing a clock signal used for operating a device to be discontinued until a second control signal restarts the clock.

Applicants are unable to find in Araki et al. any disclosure of any control element which receives the signal processing clock C5 or the sampling clock and "stops operating and goes into a sleep mode", as a result of receiving the signal processing clock or the sampling clock.

Applicants submit that Araki et al. merely discloses a continuous clock signal for operation of a digital filter and does not disclose an interrupt generating section which produces an interrupt signal, or a control section which goes to sleep based on receiving the interrupt signal, as recited by claims 8 and 14. Accordingly, Applicants respectfully request reconsideration and withdrawal of the §102 rejection of claims 8 and 14.

Further, it is respectfully submitted that since independent claims 8 and 14 been shown to be allowable, claims 9-13 and 15-19, dependent respectively on claims 8 and 14 are allowable, at least by their dependency. Accordingly, for all the above reasons, Applicants respectfully request reconsideration and withdrawal of the § 102 rejection of claims 9-13 and 15-19.

Claims 20-24

In respect to claims 20 and 22, the Examiner states that Araki et al. discloses at col. 2, lines 52-61 and col.. 7, lines 9-13 and Fig. 4 a control section which receives an electric signal indicating a current state or a deviation from a target value from the optical head and disc motor and performs an operation according to the electric signal to output a control signal, and an input/output section having a monitor terminal, the input/output section receiving the electric signal to convert the electric signal from the control section into an analog signal and outputting the converted signal from the monitor terminal to the outside. Applicants respectfully traverse the rejection.

Applicants submit that the Examiner has merely identified that the CPU drives a spindle motor based on the actuator position and the motor control speed. Thus the Examiner has failed to identify a control section in Araki et al. that receives an electric signal that may be either a current state or a deviation of a target value and that performs an operation in accordance with the electric signal.

Further, Fig. 4 discloses providing an analog signal to the coil driver of the actuator and does not show an input/output section having a monitor terminal which provides an analog signal to the outside.

Claims 20 and 22 each recite at least a control section that receives an electric signal that may be either a current state or a deviation of a target value and that performs an operation in accordance with the electric signal, and a monitor terminal that provides an analog signal to the outside. Applicants submit that Araki et al. does not disclose the aforementioned elements of independent claims 20 and 22. Accordingly, Applicants respectfully request reconsideration and withdrawal of the §102 rejection of claims 20 and 22.

Further, it is respectfully submitted that since independent claims 20 and 22 been shown to be allowable, claims 21 and 23, dependent respectively on claims 20 and 22 are allowable, at least by their dependency. Accordingly, for all the above reasons, Applicants respectfully request reconsideration and withdrawal of the § 102 rejection of claims 21 and 23.

Conclusion

Insofar as the Examiner's objections and rejections have been fully addressed, the instant application, including claims 4-23, is in condition for allowance and Notice of Allowability of claims 4-23 is therefore earnestly solicited.

Respectfully submitted,

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January 25, 2007 By: _____
(Date)

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